Personal details

Gender	Man
Name and first name:	Baudin Emmanuel
Country	France

Current position

Function

Associate Professor (Maître de conférences)

Organisme(s) public(s) français / French public organisation(s)

Code RNSR / RNSR code	Organisme / Organisation	Laboratory	Code unite / Unit code	Code postal / Postcode	Ville / Town
201922973T	Ecole Normale Supérieure	Laboratoire de Physique de l'ENS	UMR 8023	75005	Paris

Autres activités / Other activities

Activités de direction, encadrement, enseignement, activité d'évaluation dans des commissions ou d'expertise scientifique / Executive board, supervision of student, teaching, memberships in panels or individual scientific reviewing activities

2012 – Supervision of 6 PhD students and 6 master students

2012- Full teaching duty at Ecole Normale Supérieure

Quantum mechanics (L3), Mathematics for physicists (L3), International Physicists Tournament (L3) Nanophotonics (M1), Quantum Optics (M1), Physics for teachers (M2), Practicum (L3-M2)

2017-2019 Organizer of the ENS colloquium (25 invited per year)

2014-2019 Jury at Oral examination of ENS (Physics and practicums)

2010 co-funder and member of the company Eco-Defi-Energie SA civil engineering office : thermal and acoustic studies. Acquired by Paziaud SARL in November 2013

- Technical comity of the LPENS clean-room
- Peer-reviewing for Physical Review Letters, Physical, Nature Physics, …
- Evaluator for ANR, Equipex (Palm)

Postes antérieurs / Previous positions

Start date	End date	Town	Etablissement / Organisation	Fonction / Function
01/11/2010	31/10/2012	Marcoussis	Laboratoire de Photonique et de Nanostructures	Postdoc
1/09/2006	31/08/2010	Paris	Laboratoire Kastler Brossel	PhD

Formation supérieure / Education

2020 Habilitation Diploma at Paris-Sciences et Lettres University (PSL)

2006-2010 PhD under the supervision of Pierre-Jean Nacher: "Non linear NMR spin dynamics and time-reversal experiments in hyperpolarized ^{3}He-^{4}He liquid mixtures at low temperature" - Université Pierre et Marie Curie.

2006 Master degree, Physics - Université Pierre et Marie Curie/ Département de Physique de l'ENS

Projets de recherche, prix, distinctions, bourses, etc. / Grants, prizes, awards, fellowships, etc.

2020-2023 Member of the **Graphene flagship** Core 3, work package 7.4 « electronic properties » My objective is to explore the application potential of power transistors based on high-mobility graphene.

2018-2022 Partner of **ANR** BIRDS with Thalès TRT (P. Legagneux), and LPICM (D. Pribat) The objective is the realization of optoelectronic RF devices based on a PtSe2 heterostructure.

2016-2021 Partner of **ANR** TeraMicrocav, with LKB (A. Bramati) and C2N (A. Lemaitre). The objective is the generation and detection of THz radiation in semiconductor microcavities.

2017-2021 Industrial contract with Thales DMS and CIFRE PhD of Romaric Le Goff

	5 publications majeures / 5 most relevant publications	Quel est l'apport majeur de cette publication ? / What is the major contribution of this publication?
1	Hyperbolic Phonon Polariton Electroluminescence as an Electronic Cooling Pathway, E. Baudin, C. Voisin, B. Plaçais, Advanced Functional Materials, 1904783 (2019)	Review article in which I explain the electron gas cooling of high mobility graphene transistors by an electroluminescent cooling mechanism.
2	A graphene Zener–Klein transistor cooled by a hyperbolic substrate, W. Yang, S. Berthou, X. Lu, Q. Wilmart, A. Denis, M. Rosticher, T. Taniguchi, K. Watanabe, G. Feve, J.M. Berroir, G. Zhang, C. Voisin, E. Baudin, B. Plaçais, Nature nanotechnology 13, 47 (2018)	My seminal discovery of the Zener-Klein tunneling regime in a graphene transistor. This operating regime gives rise to many surprising phenomena including the observation of the cooling of the graphene electron gas with increasing electrical power dissipation.
3	L. Hamidouche, et al., "Optoelectronic Mixing in High-Mobility Graphene", ACS Photonics 8 (1), 369 (2021)	Collaborative paper with Thales TRT in which I explore the photodetection in high-mobility doped graphene up to 67GHz and show that performance of the photo-themorbolometric effect is limited by the nature of carrier scattering (Coulomb vs graphene corrugation).
4	S. M.H. Luk, et al. "All-optical beam steering using the polariton lighthouse effect", ACS Photonics 8 (2), 449 (2021)	This paper concluded a series of work I have done since 2013 on the nonlinear optics of microcavity exciton-polaritons. In this one I showed the continuous steering of a beam of light using only the input beam polarization as control parameter.
5	R. Proux, et al. "Measuring the Photon Coalescence Time Window in the Continuous-Wave Regime for Resonantly Driven Semiconductor Quantum Dots" Physical Review Letters 114 (6), 67401 (February 2015)	My theoretical contribution to the generation of quantum states of light with a semiconductor quantum dot. I have explained in detail my theoretical work in a subsequent Phys. Rev. B paper.

Identité / Personal details

Genre / Gender (Femme / Homme / Autre)	Homme
Nom et prénom / Name and first name:	DE WILDE Yannick
Pays / Country	France

Poste actuel / Current position

Titre / Function

DEPUTY DIRECTOR of Institut Langevin – Research Director at CNRS (DR1)

Organisme(s) public(s) français / French public organisation(s)

Code RNSR / RNSR code	Organisme / Organisation	Laboratoire / Laboratory	Code unite / Unit code	Code postal / Postcode	Ville / Town
199712633Z	ESPCI Paris, PSL Univ., CNRS	Institut Langevin	UMR7587	75005	PARIS

Organisme(s) privé(s) français / French private organisation(s)

Siret	Etablissement / Organisation	Direction service / Department unit	Code postal / Postal code	Ville /Town

Organisme(s) étranger(s) / Foreign organisation

Etablissement / Organisation	Laboratoire / Laboratory	Ville / Town	Pays / Country

Autres activités / Other activities

Activités de direction, encadrement, enseignement, activité d'évaluation dans des commissions ou d'expertise scientifique / Executive board, supervision of student, teaching, memberships in panels or individual scientific reviewing activities

- Deputy Director of Institut Langevin
- Coordinator of the department « Sub-wavelength physics » at Institut Langevin
- Leader of the research group "Infrared near-field optics and thermal radiation" at Institut Langevin
- Member of the Scientific Council of Institut Langevin
- Director of 3 PhD students (with co-supervision)
- Teacher of the Master's course "Near-field microscopies", M2 Laser Optique Matière at the Institut d'optique Graduate School (IOGS)
- Teacher of the Master's course "Microscopies optiques avancées et imagerie en biophotonique", Master LuMI
- Member of the Scientific Panel: Equipex project ExCELSiOR Nanoscience Characterization Center

Postes antérieurs / Previous positions

Début / Start date	Fin / End date	Ville / Town	Etablissement / Organisation	Fonction / Function
2000	2009	Paris	Institut Langevin, ESPCI Paris – CNRS	Junior Staff Scientist
1998	2000	Paris Area	LNE and CEA/Saclay	Postdoctoral Researcher
1997	1998	Paris	Ecole Normale Supérieure	Postdoctoral Researcher
1994	1997	Argonne (USA)	Argonne National Laboratory	Postdoctoral Researcher

Interruption(s) de carrière / Career interruption(s)

Formation supérieure / Education

- Habilitation Diploma at Université Pierre et Marie Curie 2004
- PhD, Physics, Université Libre de Bruxelles, Belgium & CNRS, Grenoble 1994
- Master degree, Physics, Université Libre de Bruxelles, Belgium 1989

Productions scientifiques / Scientific productions

Projets de recherche, prix, distinctions, bourses, etc. / Grants, prizes, awards, fellowships, etc.

1) Project **ANR PRCE2016** « CarISOVERRE » : Caractérisation des composants élémentaires d'isolants thermiques à base de verre.
2) Project **C'Nano IdF 2011** « SIMPLISOL » : SNOM pour l'Imagerie Plasmonique Active IR et THz, couplée au synchrotron SOLEIL pour l'extension à la spectroscopie.
3) Project **C'Nano IdF 2008** «PSTS": Photon Scanning Tunnelling Spectroscopy.
4) Project **ANR (PNANO-2007)** «NANOFTIR » : Spectroscopie à transformée de Fourier résolue spatialement à l'échelle de 100 nanomètres.

5) Project **ACI Blanche (Young Researcher) 2000** «Microscope de champ proche infrarouge ».

	5 publications majeures / 5 most relevant publications	Quel est l'apport majeur de cette publication ? / What is the major contribution of this publication?
1	Hybrid modes in a single thermally excited asymmetric dimer antenna L. Abou-Hamdan, C. Li, R. Haidar, V. Krachmalnicoff, P. Bouchon, Y. De Wilde **OPTICS LETTERS,** v. 46, 981 (2021). DOI: 10.1364/OL.413382	Experimental work combined with numerical simulations. Thermal radiation spectra of single dimers of plasmonic nano-antennas are observed by the IL partner by means of infrared spatial modulation spectroscopy. Thermally excited hybrid bonding and anti-bonding modes are observed when a nanometer-sized gap separates the nano-antennas. This work demonstrates the ability of the IL partner to produce and characterize antenna devices made of sub-wavelength building blocks.
2	Optical cooling achieved by tuning thermal radiation Y. De Wilde, R. Haidar, **NATURE**, v. 566, 186 - 187 (2019). DOI: 10.1038/d41586-019-00526-x	News & Views paper in Nature: Demonstration that the thermal radiation from a reversed bias photodiode enables one to cool a body by exchange of near-field thermal radiation and modification of chemical potential of photons.
3	Near-Field and Far-Field Thermal Emission of an Individual Patch Nanoantenna C. Li, V. Krachmalnicoff, P. Bouchon, J. Jaeck, N. Bardou, R. Haïdar, Y. De Wilde **PHYSICAL REVIEW LETTERS**, v. 121, 243901 (2018). DOI: 10.1103/PhysRevLett.121.243901	Experimental paper showing the ability of the IL partner to measure thermal radiation spectra from deeply sub-wavelength sized bodies in spite of their extremely small intensity compared to the overwhelming background thermal radiation. Use of thermal radiation scanning tunneling microscopy (TRSTM) to image thermal radiation at nanoscale.
4	Blackbody spectrum revisited in the near-field A. Babuty, K. Joulain, P.-O. Chapuis, J.-J. Greffet, Y. De Wilde **PHYSICAL REVIEW LETTERS**, v. 110, 146103 (2013). DOI: 10.1103/PHYSREVLETT.110.146103	Experimental work in which the IL partner demonstrates its ability to measure the spectrum of near-field thermal radiation using a scanning probe microscope called the thermal radiation scanning tunneling microscope (TRSTM). Strong deviations from Planck's curve are observed in the near-field spectra due to the contribution of thermally excited evanescent fields. Similar near-field contributions will enter into play in the project. Note that this work also demonstrate an effective collaboration between the IL and IOGS partners.
5	Thermal Radiation Scanning Tunnelling Microscopy Y. De Wilde, F. Formanek, R. Carminati, B. Gralak, P.-A. Lemoine, J.-P. Mulet, K. Joulain, Y. Chen, J.-J. Greffet, **NATURE**, v. 444, 740 -743 (2006). DOI: 10.1038/nature05265	Experimental work in which the IL partner has invented a new near-field thermal probe called the thermal radiation scanning tunneling microscope (TRSTM) which uses the tip of an atomic force microscope to scatter the near-field thermal radiation at the surface of nanostructures towards an infrared detector. The ANR project plans to involve the use of the TRSTM to map the near field on the devices to be produced with subwavelength resolution. Finally, this work is another demonstration of an effective collaboration between the IL and IOGS partners.

Valorisation

brevet, licence, création d'entreprise, développement de logiciel, base de données, prototype, etc. / patent, creation of a start-up, software development, database, prototype, etc.

1) **Brevet d'invention** (02 novembre 2017).

« Appareil et procédé de microscopie à fluorescence à super-résolution et de mesure de temps de vie de fluorescence ». Ref. : FR1760334
«Device and method for super-resolution fluorescence microscopy and fluorescence lifetime measurement».
US Patent App. 16/758,002 (2020)
V. Krachmalnicoff, I. Izeddin, D. Bouchet, Y. De Wilde
2) **Brevet d'invention** (23 décembre 2016).
« Dispositif de détection infrarouge ». Ref. : FR1663273
Y. De Wilde, E. Perros, V. Krachmalnicoff, R. Carminati, A.-C. Boccara
3) **Brevet d'invention** (le 08 Janvier 2016).
« Dispositif d'imagerie du champ électromagnétique d'un échantillon». Référence : FR1650165
« SNOM device using heterodyne detection »
US Patent 10,684,113 (2020)
Y. De Wilde, L. Greusard, G. Tessier, S. Gigan, S. Grésillon, K. Bencheikh

Identité / Personal details

Genre / Gender (Femme / Homme / Autre)	Female
Nom et prénom / Name and first name:	JOURNET (GAUTIER) Catherine
Pays / Country	France

Poste actuel / Current position

Titre / Function

Full Professor at the University of Lyon

Organisme(s) public(s) français / French public organisation(s)

Code RNSR / RNSR code	Organisme / Organisation	Laboratoire / Laboratory	Code unite / Unit code	Code postal / Postcode	Ville / Town
199512045U	Université Claude Bernard Lyon 1 (LYON 1)	Laboratoire des Multimateriaux et Interfaces (LMI)	UMR 5615	69622	Villeurbanne Cedex

Autres activités / Other activities

Activités de direction, encadrement, enseignement, activité d'évaluation dans des commissions ou d'expertise scientifique / Executive board, supervision of student, teaching, memberships in panels or individual scientific reviewing activities

Executive board

- Head of the LMI research team "Low-Dimensionality Materials" (8 tenure researchers, ~ 6 PhD-postdocs)
- Deputy Director of the Doctoral School of Chemistry of the University of Lyon (300 students per year)

Supervision of students

- Supervision of 10 PhD students (5 completed) and 5 post-docs

Teaching

- As full professor in a French University, 192 h of teaching (physics and chemistry from bachelor to master) in front of students per year.

Memberships in panels

- Member of the senior advisory board of JPhysMaterials (https://iopscience.iop.org/journal/2515-7639)
- Member of the editorial board of Nanomaterials (https://www.mdpi.com/journal/nanomaterials)
- Since 2019, member of the CNU (sect.33)
- Scientific co-leader of the Research Tracks 3 (RT3) "Continuous Media and Fluids" of Labex iMUST

Individual scientific reviewing activities

- Regular expert for the ANR and for international projects (Eurotalents, FWO research foundation, Canada Foundation for Innovation, Sêr Cymru II Fellowship, Fonds de recherche du Québec, CAPES-COFECUB)
- Regular referee for Nanotechnology, 2D Materials, Carbon, RSC Advances, Nanomaterials, Materials Today Communications

Postes antérieurs / Previous positions

Début / Start date	Fin / End date	Ville / Town	Etablissement / Organisation	Fonction / Function
1999	2011	Lyon (France)	University Claude Bernard Lyon 1	Assistant Professor
1998	1999	Stuttgart (Germany)	Max Planck Institute for Solid State Physics	Post-doctorate

Interruption(s) de carrière / Career interruption(s)

None

Formation supérieure / Education

2010 Accreditation to supervise research (HDR), University of Lyon, France
1998-1999: Postdoctoral fellowship, Max-Planck-Institute, Stuttgart, Germany
1995-1998: PhD in Materials Science "The production of carbon nanotubes", University of Montpellier, France
1994-1995: Master "Polymers, interfaces and amorphous states", University of Montpellier, France
1990-1994: Bachelor in physical chemistry, University of Toulon, France

Productions scientifiques / Scientific productions

Projets de recherche, prix, distinctions, bourses, etc. / Grants, prizes, awards, fellowships, etc.

Last 5 years

- LMI partner leader in the FET Flagship Graphene Core1 (2016-2018), Core 2 (2018-2020), Core 3 (2020-2023)

- LMI partner leader in 2 ANR projects (GoBN and Hystor)
- Coordinator of a contract funded under the PIA (Labex iMUST NanoCaWet)
- Partner of a contract financed in the framework of the PIA (Labex iMUST Muscat2D)
- h-factor = 33
- 78 publications, over 8000 citations

	5 publications majeures / 5 most relevant publications	**Quel est l'apport majeur de cette publication ? / What is the major contribution of this publication?**
1	Millimeter-Scale Hexagonal Boron Nitride Single Crystals for Nanosheet Generation Y. Li, V. Garnier, P. Steyer, C. Journet, B. Toury Acs Applied Nano Materials 3, 1508-1515 (2020) https://pubs.acs.org/doi/10.1021/acsanm.9b02315	Synthesis of hexagonal boron nitride crystals of millimeter size, which places these results at the international state of the art.
2	Pure & crystallized 2D Boron Nitride sheets synthesized via a novel process coupling both PDCs and SPS methods Scientific Reports 6 (2016) S. Yuan, S. Linas, C. Journet, P. Steyer, V. Garnier, G. Bonnefont, A. Brioude, B. Toury https://www.nature.com/articles/srep20388	Production of hexagonal boron nitride nanosheets by a "soft" chemistry method and alternative to "the" usual method used at high pressure and high temperature.
3	Growing a Carbon Nanotube Atom by Atom: "And Yet It Does Turn" Nano Letters 9, 2961–2966 (2009) M. Marchand, C. Journet, D. Guillot, J. Benoit, B. I. Yakobson, S. T. Purcell https://pubs.acs.org/doi/10.1021/nl901380u	Observation, by in-situ field emission, of the insertion, one by one, of carbon atoms on the circumference of a growing nanotube.
4	Contact angle measurements on superhydrophobic carbon nanotube forests: Effect of fluid pressure Europhysics Letters (EPL) 71, 104–109 (2005) C. Journet, S. Moulinet, C. Ybert, S. T Purcell, L. Bocquet https://iopscience.iop.org/article/10.1209/epl/i2005-10068-4	One of the first studies of the superhydrophobic properties of vertically aligned carbon nanotube forests.
5	Large-scale production of single-walled carbon nanotubes by the electric-arc technique Nature 388, 756–758 (1997) C. Journet, W. K. Maser, P. Bernier, A. Loiseau, M. Lamy de la Chapelle, S. Lefrant, P. Deniard, R. Lee, J. E. Fischer https://www.nature.com/articles/41972	First large-scale synthesis of single-wall carbon nanotubes by electric arc discharge. First synthesis of carbon nanotubes in France. *Cited as "Breakthrough of the Year 1997" by Science magazine [vol 278, Dec 19, 1997], then as "3rd hottest paper of 1998" by Science Watch magazine [vol 10, March/April 1999]. Cited 2338 times as of 12/04/2021 (source Web of Science™).*

Valorisation

brevet, licence, création d'entreprise, développement de logiciel, base de données, prototype, etc. / patent, creation of a start-up, software development, database, prototype, etc.

Patent "Process and photoactivated device for broadband limitation of a luminous flux", M. Andrieux, F. Lafonta, D. Riehl, L. Vivien, E. Anglaret, P. Bernier, M. Brunet, C. Goze, C. Journet, F. Hache, December 15, 1999, n° 99403142.5-2205

Identité

Gender (Femme / Homme / Autre)	man
Name and first name:	STEYER Philippe
Country	France

Current position

Function

Associate Professor

Organisme(s) public(s) français

RNSR code	Organisation	Laboratory	Unit code	Postcode	Town
197311954R	INSA Lyon	MATEIS	UMR 5510	69621	Villeurbanne

Other activities

Head of the Microscopy group of the MATEIS Laboratory

Previous positions

Start date	End date	Town	Organisation	Function
1995	1997	Nancy	Institut Jean Lamour	PhD

Interruption(s) de carrière

NA

Formation supérieure

1997 PhD, Université Paris-Sud, 1997
2007 Accreditation to supervise research (HDR), Université de Lyon

Scientific productions

Grants, prizes, awards, fellowships, etc.

2021 : EUR Manutec Sleight,
2019 : Labex Manutec.,
2018 : ANR PRCE MEGALIT,
2017 : LabEx i-MUST,
2016 : Carnot I@L,
2014 : ANR Blanc Chameleon

h-factor : 21

	5 most relevant publications	What is the major contribution of this publication?
1	S. Comby-Dassonneville, T. Venot, A. Borroto, E. Longin, C. Der Loughian, B. Ter Ovanessian, M-A. Leroy, J-F. Pierson, **P. Steyer**, *ZrCuAg thin-film metallic glasses: Toward biostatic durable advanced surfaces*, ACS Appl. Mater. Interfaces, **under press**. https://doi.org/10.1021/acsami.1c01127	Metallic glasses under the form of PVD thin films present increasing interest for their outstanding mechanical properties related to their specific microstructure. In addition, this paper relates a further bactericid character linked to silver.
2	Y Li, V Garnier, P Steyer, C Journet, B Toury, Millimeter-Scale Hexagonal Boron Nitride Single Crystals for Nanosheet Generation, ACS Applied nano Materials, 3 (2020) 1508-1515.	Hexagonal boron nitride nanosheets present interesting properties in micro-electronics. The paper presents a soft synthesis giving rise to pure wide sheets.
3	S Cazottes, A Bechis, C Lafond, G L'hôte, C Roth, C T Dreyfus, P Steyer, T Douillard, C Langlois, *Toward an automated tool for dislocation density characterization in a scanning electron microscope,* Materials Characterization, 158 (2019) 109954	Mechanical properties of metals are controlled by the dislocations density. Its quantification by TEM is complex, and the paper proposes an innovative automated technic based on a SEM-scale protocol.
4	GIN Bouala, A Etiemble, C Der Loughian, C Langlois, JF Pierson, P Steyer, *Silver influence on the antibacterial activity of multi-functional Zr-Cu based thin film metallic glasses*, Surface and Coatings Technology 343 (2018) 108-114.	Multicomponent bulk metallic glasses present outstanding properties inherent to the amorphous structure. This paper shows that similar multifunctional characteristics can be obtained for binary thin films.

5	A Etiemble, C Der Loughian, M Apreutesei, C Langlois, S Cardinal, JM Pelletier, JF Pierson, P Steyer, *Innovative Zr-Cu-Ag thin film metallic glass deposed by magnetron PVD sputtering for antibacterial applications*, Journal of Alloys and Compounds 707 (2017) 155-161.	The study establishes that PVD magnetron sputtering process can easily produced antibacterial surfaces. Besides, a TEM and SEM analysis show their metallic glass behavior in terms of both mechanics and physico-chemistry.

Valorisation

Coinventor of 2 patents :

1. C Augustin, S Cazottes, N Vaché, P Steyer, C Duret Thual, F Dupoiron, Chemical Wall-Treatment Method That Reduces the Formation of Coke, (2019) US Patent 16471032
2. C Augustin, S Cazottes, N Vaché, P Steyer, C Duret Thual, F Dupoiron, Mechanical Wall-Treatment Method That Reduces Coke Formation, and Hydrocarbon Treatment Method, (2020) US Patent 16471024

Identité

Gender (Femme / Homme / Autre)	man
Name and first name:	GREFFET Jean-Jacques
Country	France

Current position

Function

Professor (PUCE)

Organisme(s) public(s) français

RNSR code	Organisation	Laboratory	Unit code	Postcode	Town
199812837S	IOGS	Lab. C. Fabry	UMR 8501	91127	Palaiseau

Other activities

Director of the Institute for the Sciences of Light, Paris-Saclay University
Member of the steering committee of Institut d'Optique
Member of the steering committee of Labex NanoSaclay
Member of the board of the Graduate School of Physics, Paris-Saclay University

Previous positions

Start date	End date	Town	Organisation	Function
1983	2009	Châtenay-Malabry	Ecole Centrale Paris	assistant professor / professor since 1994
2001	2002	Rochester, USA	Institute of Optics	invited professor

Interruption(s) de carrière

NA

Formation supérieure

ENS Cachan (79-83), licence and maitrise in physics, Université Paris Sud.
Agrégation de physique, 1982
DEA (master) in Solid State Physics, Université Paris-Sud, 1983
PhD, Université Paris-Sud, 1988
Habilitation,Université Paris-Sud, 1992

Scientific productions

Grants, prizes, awards, fellowships, etc.

Fellow of Optical Society of America et de l'Electromagnetics Academy
Prix Servent of the french academy of Sciences
Senior member of Institut Universitaire de France 2009-2014 and 2015-2020.

PI of the ANR projects IRENA (2017), IDEE (2012), Lapsus (2007), Nanostructures Rayonnantes ACI (2004).
Partner of the projects ANR DARTAGNAN (2020), SINAPSE (2018), GYN (2017), metanizo (2017), HORUS (2016), Intelplan (2015), Domany (2014), Nhemesis (2013), UltraCis2(2012).
PI of the Chair Safran-IOGS on Ultimate Photonics (2015-2019).

	5 most relevant publications	What is the major contribution of this publication?
1	*Coherent emission of light by thermal sources*, J.J. Greffet, R. Carminati, K. Joulain, J.P. Mulet, S. Mainguy and Y Chen, Nature 416 p 61 (2002)	This paper challenges the widely accepted idea that incandescent sources are spatially incoherent. It reports for the first time a highly directional incandescent source taking advantage of leaky surface phonon polaritons.
2	*Radiative heat transfer at the nanoscale*, E. Rousseau, A. Siria, G. Jourdan, S. Volz, F. Comin, J. Chevrier and J.J. Greffet, Nature Photonics 3, p 514 (2009)	First quantitative comparison between experiment and theory of near-field radiative heat transfer. The flux is enhanced by the surface phonon-polaritons as we had predicted in a previous publication.
3	*Non-blinking quantum dot with a plasmonic nanoshell resonator*, Botao Ji, Emerson Giovanelli, Benjamin Habert,	Experimental demonstration of the Purcell effect generated by a plasmonic cavity and application

	Piernicola Spinicelli, Michel Nasilowski, Xiangzhen Xu, Nicolas Lequeux, Jean-Paul Hugonin, Francois Marquier, Jean-Jacques Greffet, Benoit Dubertret.Nature Nanotechnology 10, p 170 (2015)	to the suppression of blinking of quantum dots.
4	*Anti-coalescence of bosons on a lossy beam splitter*, B. Vest, M.C Dheur, E. Devaux, A. Baron, E. Rousseau, J.P. Hugonin, J.J. Greffet, G. Messin, F. Marquier, Science 356, 1373 (2017)	Reproduction of an iconic experiment of quantum optics (coalescence of indistinguishable photons on a beam splitter) with surface plasmons. Observation of anticoalescence for some beam splitters due the presence of losses.
5	Antenna surface plasmon emission by inelastic tunneling, Cheng Zhang, Jean-Paul Hugonin, Anne-Lise Coutrot, Christophe Sauvan, François Marquier, Jean-Jacques Greffet, Nature Com. (2019) doi.org/10.1038/s41467-019-12866-3	Demonstration of electrical emission of surface plasmons by inelastic tunneling in a Al/AlOx/Au junction assisted by an array of plasmonic antennas.

Valorisation

Coinventor of 4 patents :

1. O. Berthet, J.-J. Greffet, Y. Denayrolles, Brevet français No. EN 86/11542; 8 août 1986
2. R. Espiau de Lamaestre, J.J. Greffet, B. Guillaumot, R. Esteban FR N° 09/59007 (2009-12-15),
3. S. Vassant, F. Pardo, F. Marquier, A. Archambault, J.-J. Greffet, J.-L. Pelouard FR 1151189, (2011-02-14)
4. S. Vassant, F. Pardo, F. Marquier, A. Archambault, J.-J. Greffet, J.-L. Pelouard FR 1151195, (2011-02-14)